Oklahoma

Oklahoma Department of Agriculture, Food, and Forestry
Forestry Services Division
2800 N. Lincoln Blvd
Oklahoma City, OK 73105

Project Name *Canadian River Riparian Forest Restoration Project*

Project Leads

Project Description:

Running waterways and forested riparian areas are especially important in Oklahoma and the western portion of the Southern Region. Riparian forests provide many important benefits to humans. They are a source of fresh drinking water and protect or provide habitat to a multitude of fish and wildlife species, some considered endangered or at-risk. They provide important benefits to communities as they function to moderate the impacts of floodwaters, improve water quality, and reduce sedimentation in streams and reservoirs. Their pleasing combination of land, water, vegetation, and wildlife attract us as places to relax and observe nature.

Unfortunately, human activities within and around the state's waterways have often led to a loss of water quality and the destruction of habitat for fish and wildlife. As a result, 76 percent of Oklahoma's streams and rivers and 49 percent of its lakes are now considered threatened or impaired by some form of pollution according to the Environmental Protection Agency.

The Canadian River is the largest tributary of the Arkansas River. It is about 760 miles long, starting in Colorado and traveling through New Mexico, the Texas Panhandle, and most of Oklahoma where it joins the Arkansas River, about 40 miles west of the Arkansas border.

In much of Oklahoma the Canadian River riparian forest is a shell of its former self. Whereas cottonwoods (*Populus deltoides*), American elm (*Ulmus americana*), pecan (*Carya illinoensis*), western soapberry (*Sapindus drummondii*), black walnut (*Juglans nigra*), and black willow (*Salix nigra*) once dominated, overgrazing and deforestation by agriculture interests have resulted in stream bank erosion, invasive species encroachment, and the loss of wildlife habitat and other ecosystem services.

This two-year project is designed to enhance and restore the riparian forest and habitat along a portion of an approximately 70-mile section of the Canadian Ri[illegible]

Evaluation Criteria Discussion:

National and Regional Relevance:

In the western counties of Oklahoma, riparian forests provide important "islands" and corridors of wildlife habitat while providing other ecological services of clean air and water, and recreational opportunities in a prairie dominated landscape. The project will help conserve forestlands along the Canadian River, and improve forest health. The project will increase the likelihood of cottonwood and other deciduous tree species successfully re-occupying sites that are now being encroached upon by water-thirsty invasive species, such as juniper and salt cedar.

Prioritization:

The Canadian is one of the largest rivers in Oklahoma. Throughout its length, it is under intensive pressure from agriculture and other human interests. Studies have shown riparian forests can reduce sedimentation and remove 88% of nitrate (a form of nitrogen) and 76% of phosphorus from agricultural runoff, effectively reducing the quantities of these nutrients ultimately reaching Oklahoma's streams and lakes. This "filtering" mechanism improves both aquatic and terrestrial wildlife habitats, as well as reduces treatment costs of downstream water users.

A healthy Canadian River riparian area will reduce the energy of the water flow while stabilizing the river banks, allowing some of the water to infiltrate into the ground and to be stored in areas such as wetlands thus reducing downstream flooding, recharging groundwater, and maintaining stream base flow during the summer months. The State Technical Committee and a majority of the state's conservation districts have identified the control of invasive juniper species as Oklahoma's top conservation priority. The project will include invasive species control as a component of the treatment, provided that it helps restore the riparian forest in designated areas, resulting in improvements in water quality as well as water quantity in base flows. The City of Oklahoma City relies to a great extent on runoff from the Canadian River system for its water supply, and will be a direct beneficiary of project success.

In some areas, the riparian forest forms a canopy that shades the stream. The shade moderates water temperature and protects the water against fluctuations in temperature that can be detrimental to the stream ecosystem's health.

The riparian forest provides important habitats, including nesting and roosting areas for birds, cover and a variety of food items for wildlife species. An unbroken riparian forest also provides a pathway for the movement and migration of animals and a connection between isolated blocks of forest.

Meaningful Scale:

Regional and national forest land priorities typically ignore the riparian areas of central and western Oklahoma, but OFS priorities insist that we restore, conserve and enhance the habitat around these flowing waterways. These areas are critical to maintain water quality, prevent erosion, and provide habitat to a multitude of fish and wildlife species, some considered endangered or at-risk (specific to this project – the lesser prairie chicken and Arkansas river shiner). This project adjoins and complements similar projects undertaken in Texas and underway in Oklahoma by the Department of Wildlife Conservation, The Nature Conservancy and NWTF as part of the Southern Great Plains Riparian Initiative. All are designed to restore, enhance and protect the riparian forests of the Great Plains.

Collaboration:

Oklahoma Forestry Services (OFS) has established partnerships with the Oklahoma Department of Wildlife Conservation, USFWS, Natural Resources Conservation Service, Oklahoma Conservation Commission, The Nature Conservancy, and the National Wild Turkey Federation to accomplish the desired outcomes of this project. Discussions with numerous private organizations are currently underway to provide additional funding for Oklahoma's Forest Resource Development Program (FRDP) being utilized to provide cost-share opportunities as a part of this project.

Outcomes:

The desired outcome of this project is the reestablishment, enhancement and protection of critical riparian forest on a portion of a 70-mile stretch of the Canadian River. This forest is identified by OFS as a high priority forest landscape in central and western Oklahoma. Results will be readily transferrable to other portions of the Canadian River watershed, as well as to similar watersheds in the region.

Technology:

The identified project area was identified and defined spatially. Throughout this project, spatial tools will be utilized to direct, manage and report activities within the project area. During the development of this project, geospatial data was obtained from each of the various partners in order to present a more comprehensive picture of the current status of work in the watershed.

Integrated Delivery:

This project focuses existing OFS programs and services to an area of high priority forest landscape. Oklahoma's Forest Resource Development Program will be utilized to provide cost-share opportunities to landowners, and EQIP funding will be utilized where available. The Forest Stewardship program will be used as the framework for providing technical assistance. The new NWTF biologist position will help promote the project, make landowner contacts and help deliver needed technical assistance in the project area. There are already a number of small-scale scattered tracts that have been treated in the vicinity with support by various organizations. The proposed project will help coordinate these disjointed efforts into a more cohesive and larger-scale initiative.

Leverage:

OFS is already participating in a number of active partnerships with corporate sponsors and conservation organizations. A potential corporate sponsor for a portion of this project has been identified and discussions are ongoing. The NWTF will participate directly in this project and fund a portion of the biologist position that is critical to following up with landowners along the river.

Influence Positive Change:

This project will enhance OFS efforts in carrying out the Division's mission in western Oklahoma, and will help establish support for the NWTF biologist position whose influence will extend far beyond project boundaries. Collaboration between the various partners will improve skills in establishing riparian forests throughout central and western Oklahoma and west Texas, and will encourage additional partnerships to address riparian forest needs on other watersheds.

Timeliness:

The initial phases of the project, including a cooperative agreement between the main parties involved, are underway. The NWTF is in the process of hiring a wildlife biologist to help provide assistance in the Canadian River watershed. OFS and the Oklahoma Department of Wildlife Conservation have identified areas for demonstration plantings. These will be utilized for landowner education.

Public notice of the program will begin in the second quarter of FY2008 and the cost-share incentive is scheduled to remain available until the third quarter FY2009 or until funding is depleted.

Although removal of invasive species and regeneration of riparian forests will occur on some portions of the watershed during the project period, landscape level changes will take more time. It is hoped that a successful small-scale project will raise the awareness of landowners throughout the watershed, and will result in stable funding for the NWTF partnership and increased state and non-federal funding support for financial assistance to landowners willing to complete the practices needed to accomplish program goals in the years ahead.